

## EAST Search History

| Ref # | Hits | Search Query   | DBs   | Default Operator | Plurals | Time Stamp       |
|-------|------|--|---|------------------|---------|------------------|
| S1    | 4265 | (three\$1way or twc) near5 catalyst  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR               | ON      | 2006/02/10 14:06 |
| S2    | 4348 | (three\$1way or twc) near10 catalyst   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR               | ON      | 2005/04/19 10:46 |
| S3    | 257  | S2 and (substrate same (steel or hastelloy or alloy or titanium))                                      | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR               | ON      | 2005/04/19 10:49 |
| S4    | 2    | S3 and ((layer\$3 or coat\$3) near10 alumin\$2silicate)  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR               | ON      | 2005/04/19 10:50 |
| S5    | 149  | S2 and (substrate same (steel or hastelloy or alloy))  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR               | ON      | 2005/04/19 10:49 |
| S6    | 2    | S5 and ((layer\$3 or coat\$3) near10 alumin\$1silicate)  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR               | ON      | 2005/04/19 10:50 |
| S7    | 20   | S5 and alumin\$1silicate   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR               | ON      | 2005/04/19 10:50 |
| S8    | 2305 | (substrate or carrier or support) same alumin\$2silicate same alumina                                  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR               | ON      | 2005/06/18 11:36 |
| S9    | 237  | (substrate same ("stainless steel" or "carbon steel" or titanium or "fecn alloy" or hastelloy)) and S8 | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR               | ON      | 2005/06/18 11:37 |

## EAST Search History

|     |       |   |   |    |    |                  |
|-----|-------|---|---|----|----|------------------|
| S10 | 0     | S9 and ("expansion cone")   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON | 2005/06/18 11:27 |
| S11 | 12    | S9 and (two or "three way catalyst")  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON | 2005/06/18 11:37 |
| S12 | 1218  | (layer\$3 or coat\$3) same alumin\$2silicate same alumina   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON | 2005/06/18 11:36 |
| S13 | 160   | (substrate same ("stainless steel" or "carbon steel" or titanium or "ferr alloy" or hastelloy)) and S12 | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON | 2005/06/18 11:37 |
| S14 | 3     | S13 and (two or "three way catalyst")   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON | 2005/06/18 11:37 |
| S15 | 10038 | alumina same (alumin\$1silicate or alumina\$1silicate)  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON | 2005/06/25 16:51 |
| S16 | 37    | S15 and ((alumin\$1silicate or alumina\$1silicate) adj (coating or layer))                              | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON | 2005/06/25 16:54 |
| S17 | 7     | S16 and (alumina same "particle size")  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON | 2005/06/25 16:52 |
| S18 | 0     | "three\$1way catalyst"  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON | 2005/06/25 16:54 |
| S19 | 10842 | "three way catalyst" or two   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON | 2005/06/25 16:54 |

## EAST Search History

|     |        |  |   |    |     |                  |
|-----|--------|--|---|----|-----|------------------|
| S20 | 0      | S19 and "metal\$3 substrate"   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON  | 2005/06/25 16:55 |
| S21 | 719    | S19 and (substrate same (metal or metallic))   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON  | 2005/06/25 16:55 |
| S22 | 46     | S21 and alumin\$2silicate  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON  | 2005/06/25 16:55 |
| S23 | 0      | S21 and (alumin\$2silicate adj (coating or layer))   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON  | 2005/06/25 16:56 |
| S24 | 2      | S22 and ("alumina particles" or "particulate alumina")   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON  | 2005/06/25 16:56 |
| S25 | 6      | ("3518206").PN.  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | OFF | 2005/06/26 09:58 |
| S26 | 2      | ("3891575").PN.  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | OFF | 2005/06/26 09:58 |
| S27 | 550606 | substrate same (metal\$3 or steel or titanium or alloy or "stainless steel" or "carbon steel") | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON  | 2006/02/10 13:33 |
| S28 | 31     | S27 and (coat\$3 same alumina\$1silicate)  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON  | 2006/02/10 13:46 |
| S29 | 15     | S27 and "expansion cone"   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON  | 2006/02/10 13:47 |

## EAST Search History

|     |        |  |   |    |     |                  |
|-----|--------|--|---|----|-----|------------------|
| S30 | 8      | ((("5620672") or ("5422331") or ("5721188") or ("5204302"))).PN. | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | OFF | 2006/02/10 14:06 |
| S31 | 125360 | substrate same metal\$3 same coat\$3                             | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON  | 2006/02/16 08:59 |
| S32 | 24     | S31 and (coat\$3 same alumina\$1silicate)                        | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON  | 2006/02/16 08:50 |
| S33 | 27     | (substrate same metal\$3) and (coat\$3 same alumina\$1silicate)  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON  | 2006/02/16 09:03 |
| S34 | 8      | "metal substrate" and (coat\$3 same alumina\$1silicate)          | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON  | 2006/02/16 09:00 |
| S35 | 0      | ("3443978").URPN.  | USPAT   | OR | ON  | 2006/02/16 09:06 |
| S36 | 2778   | (428/450).CCLS.  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | OFF | 2006/02/16 10:38 |
| S37 | 3909   | (428/469).CCLS.  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | OFF | 2006/02/16 10:38 |
| S38 | 1661   | (428/325).CCLS.  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | OFF | 2006/02/16 10:38 |
| S39 | 1805   | (428/697).CCLS.  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | OFF | 2006/02/16 10:39 |

## EAST Search History

|     |      |   |   |    |     |                  |
|-----|------|---|---|----|-----|------------------|
| S40 | 3303 | (428/702).CCLS.                                   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | OFF | 2006/02/16 10:39 |
| S41 | 1    | S36 and alumina\$1silicate                        | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON  | 2006/02/16 10:41 |
| S42 | 55   | S36 and (alumina\$1silicate or bentonite)         | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON  | 2006/02/16 10:45 |
| S43 | 5    | S42 and ((particle or particulate) near5 alumina) | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON  | 2006/02/16 10:45 |
| S44 | 49   | S37 and (alumina\$1silicate or bentonite)         | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON  | 2006/02/16 10:46 |
| S45 | 3    | S44 and ((particle or particulate) near5 alumina) | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON  | 2006/02/16 10:46 |
| S46 | 57   | S38 and (alumina\$1silicate or bentonite)         | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON  | 2006/02/16 10:48 |
| S47 | 8    | S46 and ((particle or particulate) near5 alumina) | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON  | 2006/02/16 10:48 |
| S48 | 29   | S39 and (alumina\$1silicate or bentonite)         | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON  | 2006/02/16 10:48 |
| S49 | 3    | S48 and ((particle or particulate) near5 alumina) | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON  | 2006/02/16 10:48 |

## EAST Search History

|     |       |   |   |    |     |                  |
|-----|-------|---|---|----|-----|------------------|
| S50 | 41    | S40 and (alumina\$1silicate or bentonite)   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON  | 2006/02/16 10:48 |
| S51 | 4     | S50 and ((particle or particulate) near5 alumina)   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON  | 2006/02/16 10:49 |
| S52 | 4199  | (three\$1way or twc) adj catalyst   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON  | 2006/02/16 10:50 |
| S53 | 662   | S52 and (substrate same (metal\$3 or steel or alloy))                                       | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON  | 2006/02/16 10:51 |
| S54 | 1     | S53 and (coat\$3 same alumina\$1silicate)   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON  | 2006/02/16 10:52 |
| S55 | 2     | S53 and alumina\$1silicate  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON  | 2006/02/16 10:54 |
| S56 | 37    | S53 and alumino\$1silicate  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON  | 2006/02/16 10:55 |
| S57 | 11170 | (428/450,469,325,697,702).CCLS.   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | OFF | 2006/02/16 14:56 |
| S58 | 48937 | b01j037/02.ipc. or b01d053/34.ipc. or b01j023/22.ipc. or c01b021/02.ipc. or f01n003/15.ipc. | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON  | 2006/02/16 15:11 |
| S59 | 11170 | (428/450,469,325,697,702).CCLS.   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | OFF | 2006/02/16 15:11 |

## EAST Search History

|     |       |  |   |    |     |                  |
|-----|-------|--|---|----|-----|------------------|
| S60 | 60105 | S58 or S59   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON  | 2006/02/16 15:14 |
| S61 | 48937 | b01j037/02.ipc. or b01d053/34.ipc.<br>or b01j023/22.ipc. or c01b021/02.<br>ipc. or f01n003/15.ipc. | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON  | 2006/02/16 15:21 |
| S62 | 11170 | (428/450,469,325,697,702).CCLS.  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | OFF | 2006/02/16 15:21 |
| S63 | 60105 | S61 or S62   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON  | 2006/02/16 15:21 |
| S64 | 5176  | S63 and (substrate same (metal\$3<br>or alloy or steel))   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON  | 2006/02/16 15:31 |
| S65 | 17    | S64 and (layer\$3 same<br>(alumina\$1silicate or bentonite))                                       | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON  | 2006/02/16 15:35 |

## EAST Search History

| Ref # | Hits  | Search Query  | DBs   | Default Operator | Plurals | Time Stamp       |
|-------|-------|---|---|------------------|---------|------------------|
| L1    | 3477  | (layer\$3 or washcoat) same (alumina\$1silicate or alumino\$1silicate)                      | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR               | ON      | 2006/02/17 09:40 |
| L2    | 961   | 1 and (substrate same (metal\$3 or alloy or steel))   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR               | ON      | 2006/02/17 09:57 |
| L3    | 58    | 2 and (((outer or top or external) adj layer) same alumin\$2)                               | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR               | ON      | 2006/02/17 09:58 |
| L4    | 2518  | (502/439,527.12,527.24,527.15, 527.12).CCLS.  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR               | OFF     | 2006/02/17 09:38 |
| L5    | 343   | 4 and (substrate same (metal\$3 or alloy or steel))   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR               | ON      | 2006/02/17 09:38 |
| L6    | 3     | 1 and 5   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR               | ON      | 2006/02/17 09:39 |
| L7    | 17    | 5 and (alumina\$1silicate or alumino\$1silicate)  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR               | ON      | 2006/02/17 09:57 |
| L8    | 48937 | b01j037/02.ipc. or b01d053/34.ipc. or b01j023/22.ipc. or c01b021/02.ipc. or f01n003/15.ipc. | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR               | ON      | 2006/02/17 09:56 |
| L9    | 11170 | (428/450,469,325,697,702).CCLS.   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR               | OFF     | 2006/02/17 09:56 |



## EAST Search History

|     |       |  |   |    |    |                  |
|-----|-------|--|---|----|----|------------------|
| L10 | 60105 | L8 or L9   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON | 2006/02/17 09:56 |
| L11 | 5176  | L10 and (substrate same (metal\$3<br>or alloy or steel)) | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON | 2006/02/17 09:56 |
| L12 | 162   | L11 and (alumina\$1silicate or<br>alumino\$1silicate)    | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON | 2006/02/17 09:56 |
| L13 | 75    | 1 and 11   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON | 2006/02/17 09:57 |
| L15 | 17    | 3 and 13   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR | ON | 2006/02/17 09:59 |

## EAST Search History

| Ref # | Hits | Search Query  | DBs  | Default Operator | Plurals | Time Stamp       |
|-------|------|---|--|------------------|---------|------------------|
| L1    | 321  | alumina same (alumino-silicate or aluminosilicate or alumino adj silicate)<br>same metal\$3 same layer\$4 | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT<br>; IBM_TDB | OR               | ON      | 2006/02/17 10:17 |
| L2    | 179  | ll and catalyst   | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT<br>; IBM_TDB | OR               | ON      | 2006/02/17 10:17 |